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Polytymous Nerve Fibres.—Dr. E. Ballowitz¹ has found that the enormous electric nerve fibres of the electric catfish of the Nile, *Malapterurus*, do not branch as ordinary medullated fibres do, but divide at once into from four to nine trunks. The most usual numbers were five or seven, the even numbers, six and eight, being less frequent. The resulting fibres varied much in calibre, but were always thinner than the main fibre, which, however, was not so large in cross-section as the derived fibres taken collectively. A derived single fibre may branch again dichotomously or trichotomously, as ordinary fibres do. The condition shown in the division of the main fibre in *Malapterurus* is intermediate between that found in ordinary nerve fibres and in the electric ray, *Torpedo*, where the branches vary between fifteen and twenty-five.

G. H. P.

Nerve Cells of the Human Cortex.—Helen B. Thomson² has undertaken some interesting computations concerning the composition of the brain in man. She finds that the total number of functional nerve cells in the cerebral cortex of an adult man is in round numbers ninety-two hundred millions, and yet the volume of these is only 1.37% of the whole cortex. The number of giant cells in the cortex corresponds almost exactly with the number of pyramidal fibres passing to the spinal cord, and hence the pyramidal fibres are probably the processes of these cells.

G. H. P.

The Fur Seals and Fur Seal Islands.—The third volume of the voluminous report on the Fur Seal and the Fur Seal Islands, by Dr. David Starr Jordan and his associates, is just issued from the Government Printing Office. The first two volumes, issued some time since, relate to The Fur Seal of the Pribilof Islands: its History, its Natural History, and its Fate. The fourth volume, already issued, consists of Dr. Leonhard Stejneger's report on The Fur Seal Islands of Russia and Japan.

The present volume is due to the enlightened interest of Mr. Charles Sumner Hamlin, then Assistant Secretary of the Treasury, who instructed the Commission to use all possible effort to complete our knowledge of the fauna and flora of the regions visited.

The present volume of 630 quarto pages is devoted almost entirely

¹ Ballowitz, E. Ueber polytome Nervenfaserteilung, *Anat. Anzeiger*, Bd. xvi, pp. 541-546.

² Thomson, H. B. The Total Number of Functional Cells in the Cerebral Cortex of Man, etc., *Journ. of Comp. Neurology*, vol. ix, pp. 113-140.

to the natural history of Bering Sea. It was prepared under Dr. Jordan's direction, under the editorial supervision of Mr. Frederic A. Lucas. It contains the following articles, most of them fully illustrated:

1. "The Main Divisions of the Pinnipedia," by Mr. Lucas. In this paper the distinctions between the Otariidea, or eared seals (with the walrus), and the Phocoidea, or true seals, are fully developed.

2. "The Species of *Callorhinus*, or Northern Fur Seal," by Dr. Jordan and Mr. George A. Clark, Secretary to the Commission. In this paper three closely related species or subspecies are indicated and named, corresponding to the three well-known herds. These are *Callorhinus ursinus* (L), the fur seal of Komandorski, *Callorhinus alascanus*, the fur seal of the Pribilofs, and *Callorhinus curilensis*, the fur seal of Robben Island and the Kuriles. As the differences are slight, these may well be regarded as subspecies, but from the nature of things they do not intergrade. The generic name *Callorhinus* is retained as sufficiently distinct from the earlier *Callorhina*, the two words being spelled differently. Those who hold otherwise may call the fur seal *Callotaria* Palmer.

3. "Variations in Size and Color of the Fur Seal," by Mr. Lucas.

4. "Dentition of the Fur Seal," by Mr. Lucas.

5. "Anatomy of the Fur Seal," by Robert E. Snodgrass.

6. "Brain of the Fur Seal," by Dr. Pierre A. Fish.

7. "Breeding Habits of the Fur Seal," by Mr. Lucas.

8. "Food of the Fur Seal," by Mr. Lucas. This is shown to consist mainly of the seal-fish (*Therobromus callorhini*), a species of smelt hitherto undescribed, of the Alaskan pollock (*Theragra chalcogramma*), and of a squid (*Gonatus amœnus*). Practically no species available as human food are commonly eaten by the fur seal.

9. "Mental Traits of the Fur Seal," by Mr. Lucas.

10. "Causes of Mortality among Fur Seals," by Mr. Lucas.

11. "Internal Parasites of the Fur Seal," by Charles Wardell Stiles and Albert Hassall. Of these the most important is the strongyle worm, *Uncinaria*, which destroys large numbers of the seal pups on the sandy rookeries on St. Paul. The eggs of this worm lie in the sand, adhere to the fur of the mother, and are swallowed by the young. Most of the rookery ground is rocky, but on sandy tracts, as on parts of Tolstoi and Zapadni rookeries, the mortality is very great, the pups affected dying of anæmia. In this paper fourteen species of *Ascaris* are described besides the *Uncinaria* and a small tapeworm.

12. "The Beasts of the Sea," a translation from Steller's original account by Professor Walter Miller. This remarkable work (*De Bestiis Marinis*), published in 1751, gives the first account of the sea cow, the sea otter, sea lion, and sea bear, or fur seal.

13. "The Sea Bear," a translation of an essay by Bishop Ivan Veniaminof, 1839, by Dr. Leonhard Stejneger.

14. "Pelagic Sealing," by Charles H. Townsend, a valuable collection of observations and records.

15. "Notes on the Fur Seals of Guadalupe, Galapagos, and Lobos Islands," by Mr. Townsend. This article and the preceding are illustrated by excellent photographs.

16. "Descriptions of the Guadalupe Seal, *Arctocephalus townsendi*," by Dr. C. Hart Merriam.

17. "Exploration of Guadalupe Island," by Dr. Wilbur W. Thoburn.

18. "Insects of Guadalupe," by William A. Snow.

19. "Plants of Guadalupe," by Professor William Russell Dudley. One new species, *Talinum guadalupense*, is described.

20. "Cruise of the *Dora Siewerd*" (sealing schooner), by A. B. Alexander.

21. "Fur-Seal Hunting in the Southern Hemisphere," by Dr. J. A. Allen.

22. "Rookery Maps of the Pribilof Islands," by Lieut.-Comm. J. F. Moses, U. S. N.

23. "Branding of Seals," by Dr. Jordan and Mr. Clark.

24. "Electrical Branding," by Elmer E. Farmer.

25. "Branding Experiments on St. Paul," by Colonel Joseph Murray.

26. "Branding Experiments on St. George," by Mr. James Judge.

27. "The Blue Fox (*Vulpes lagopus*)," by Dr. Jordan and Mr. Clark.

28. "Mammals of the Pribilof Islands," by Frederick W. True.

29. "Birds of the Pribilof Islands," by William Palmer. Sixty-nine species enumerated, with valuable notes and plates.

30. "Fishes of Bering Sea," by Dr. Jordan and Dr. Chas. H. Gilbert. Two hundred and twenty-nine species enumerated, with notes and numerous plates. The numerous species are all included in Jordan and Evermann's "Fishes of North and Middle America."

31. "Fishes of Arctic Alaska," by Norman B. Schofield. Notes on thirty-eight species, two, *Argyrosomus alascanus* and *Liparis herschelini*, being new.

32. "Tunicates of the Pribilof Islands," by Dr. William E. Ritter. Eleven species described and figured, ten being new. These are *Styela greeleyi*, *Dendrodoa tuberculata* and *D. subpedunculata*, *Polyclinum globosum* and *P. pannosum*, *Aplidiopsis jordani*, *Amaroucium kincaidi*, *A. pribilovense*, and *A. snodgrassi*, and *Synoicum irregulare*.

33. "Mollusks of the Pribilof Islands," by Dr. William H. Dall.

34. "Insects of the Pribilof Islands," by E. A. Schwartz.

Two seal ticks are described as new, *Hæmatopinus callorhini* and *Ixodes arcticus*, in a supplemental note by Professor Herbert Osborn.

35. "Crustacea of the Pribilof Islands," by Mary J. Rathbun. *Crangon communis*, *Nectocrangon crassa*, *Spirontocaris barbata*, and *Spirontocaris avina* described as new.

36. "Plants of the Pribilof Islands," by James M. Macoun. With notes and plates.

37. "Algæ of the Pribilof Islands," by Dr. W. A. Setchell. Thirty-eight species noted.

Many of these papers deserve more extended notice or review, but this note may serve as an index to them.

D. S. J.

Fishes of the Potomac River. — In the *United States Fish Commission Bulletin* for 1898, Dr. Hugh M. Smith and Mr. Barton A. Bean give a valuable list of the fishes found in the waters of the District of Columbia, with notes on their distribution. Eighty-one species are enumerated.

D. S. J.

The Reappearance of the Tilefish. — In May, 1879, Captain Kirby, of Gloucester, discovered in the deep waters south of Nanucket a very remarkable fish, brilliantly colored and of high value as food. This fish was described by Goode and Bean as *Lopholatilus chamaeleonticeps*, and the common name of the tilefish was suggested by Dr. Goode. This name alludes to its tile-like coloration, being also an available syllable of *Lopholatilus*, its scientific name. In 1882 vast numbers of tilefish were killed by a cold storm, and were found floating in the Gulf Stream. Since that time the species has not been seen until 1897 and 1898. The explorations of the *Grampus* under the auspices of the United States Fish Commission show that the species now occupies its original range, having recovered from the partial extermination of 1882. A full record of these investigations is given by Dr. Hermon C. Bumpus in the *Bulletin of the United States Fish Commission* for 1898.

D. S. J.

The Nervous System of the Bony Fishes. — Dr. C. Judson Herick, of Denison University, contributes to the *Bulletin of the United States Fish Commission* for 1898 a valuable study of the peripheral nervous system in bony fishes.

D. S. J.

A Filefish New to the United States. — Dr. Hugh M. Smith, in the *Bulletin of the United States Fish Commission* for 1898, describes and figures a species of filefish new to the waters of the United States, and which he refers to *Alutera monoceros*, a species of the Indian Ocean and tropical Pacific. The specimen was taken at Woods Holl by Mr. Vinal N. Edwards, and is evidently like so many others found in this locality, a straggler brought from the West Indies by the Gulf Stream.